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ABSTRACT

Developed by the ABCs of Construction National Workplace Literacy Project, these curriculum materials for the occupational area of pipefitter contain two lessons that deal with finding the main idea. Each lesson consists of an objective, instruction, and exercises. Lesson 1 contains seven exercises, and Lesson 2 has three. The objectives for the two lessons are for the student to be able to find main ideas in paragraphs and for the student to be able to recognize sequence and comparison-contrast paragraph and passage structure. (YLB)

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TECHNICAL DEVELOPMENT CENTER
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Finding the **Main Idea**

PIPEFITTER

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Associated Builders & Contractors, Inc.
EBR Adult & Continuing Education

ABC's of Construction
National Demonstration Project in Workforce Literacy

The ABC's of Construction Project was funded in 1991 by the U.S. Department of Education as a grantee through the National Workplace Literacy Program (PR #198A10155). The program provided basic skills instruction to industrial construction workers employed by companies which are members of the Pelican Chapter of Associated Builders and Contractors (ABC). Located in Baton Rouge, Louisiana, ABC provides training to employees of over 60 member companies who perform contract work in the 58 petrochemical facilities located along the Mississippi River between Baton Rouge and New Orleans.

The grantee, the Adult Education Department of East Baton Rouge School Board, performed a comprehensive literacy task analysis of the apprenticeship training program for millwrights, pipefitters, electricians, instrumentation techs, and welders involved in the ABC training program. Over 20 modules of original, contextual curriculum were developed to teach the reading and math skills required for success in the craft training program.

Materials developed for instruction incorporated cognitive strategies for learning basic skills in the context of the craft and safety knowledge demanded by the industrial construction workplace. Instruction was written for a competency-based, open-entry/open-exit, individualized adult learning program that operated at the ABC training center in the evenings after work-hours.

OBJECTIVE

By the end of this lesson, you will be able to find main ideas in paragraphs.

INSTRUCTION

Consider the topic wrenches. What is a wrench? Which parts of a wrench define it? The jaws and handle comprise all that's needed for a wrench to be. They are the main idea of the wrench. Details make wrenches different. They provide the features that change wrenches so they can do different jobs. The material they're made of, the type of jaws they have, and the shape of the handle make a pipe wrench different from a combination, spud, or adjustable wrench.

Similarly, a paragraph consists of a topic, main idea, and details. A topic concerns a broad general subject. The main idea is the key element(s) that define(s) the topic. The main idea expresses the key concept. Details limit or describe the main idea. Pictures, conversations, movies, commercials, reading selections, and paragraphs all contain topics, main ideas, and details.

Think about an umbrella. It must cover all of you to be effective. A main idea is like that too. The main idea must cover all the details within a paragraph to be effective. If either one has "holes" in it, it is useless. Details support the main idea by telling how, when, how much, how many, why, or what kind. Because details give information about one topic, they relate to each other in some way. Finding the topic, main idea, and details helps you understand the writer's point. It increases your understanding.

Authors sometimes place main ideas in topic sentences. These sentences are often the first or last sentence of the paragraph. However, authors can put them anywhere or nowhere at all. You need to find main ideas for yourself. The steps for doing so follow:

1. **Read the paragraph.**
2. **Ask yourself "What is the one thing this paragraph is about?" This is the topic.**
3. **Look for details that point to or support the topic. What thought is being stated? This is the main idea.**
4. **Think of a sentence that summarizes this idea.**
5. **Look for a sentence that says this key concept. If you see one, underline it. If you do not, write your main idea statement in the margin beside the paragraph.**

For example, consider the two paragraphs below.

There is tendency to rely too much on adjustable wrenches. They are not intended to replace open-end wrenches. Rather, they are meant to be used on the odd-sized fastener that might be encountered, reducing the number of open-ended wrenches that must be carried.

Plumb bobs taper to a point. They are available in different weights, 6 oz., 8 oz., and 12 oz. being the most common. A cord is attached to them and then hung from a vertical member. If the distance from the top of the member to the point to which the cord is attached is equal to the distance from the bottom of the member to the point of the plumb bob, the member is said to be "in plumb." If not, the member is "out of plumb" and this distance can be measured.

The main idea of the first paragraph is that people use adjustable wrenches for something other than what they were intended. The second and third sentences support this main idea. The first sentence states the main idea.

The main idea of the second paragraph is how to use a plumb bob. The sentences which support this are the third, fourth, and fifth. This key concept is not stated in the paragraph. Thus, the second paragraph has an unstated main idea.

1 Exercise

Ginger has been thinking of starting an apprentice program. She finds the following information to support her proposal. She hopes to get money from several local companies.

> **Industry, too, benefits greatly. Out of apprenticeship programs comes well-rounded craft workers competent in all branches of their trades and able to work without close supervision because their training has enabled them to use imagination, ability, and knowledge of their work. When changes are made in production, these workers provided the versatility needed for quick adaptation of work components to suit the changing needs. An adequate supply of skilled workers with these qualities is vital to industrial progress.**

1. Write the main idea of this passage in your own words. What sentences showed you this key concept?

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2. Is it stated or unstated? How do you know this? If stated, copy the topic sentence.

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3. Why are apprentices able to work without close supervision?

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2 Exercise

Hosea's first day of work is next Monday. He wants to be dressed right. His textbook provides the following information:

> **The best shoes to wear on a construction site are steel-toe, steel-sole safety shoes. The steel toe protects the toes from falling objects, and the steel sole prevents nails and other sharp objects from puncturing the foot. The next best footwear material is heavy leather. Canvas shoes or sandals should never be worn on a construction site.**

1. Write the main idea of this passage in your own words.

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2. Is it stated or unstated? How do you know? If stated, copy the topic sentence.

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3. Why do you need to wear steel-toe, steel-sole safety shoes?

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4. Why is the word <u>never</u> underlined in the last sentence?

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3 Exercise

Regina's little boy is excited that his mommy is going to be a pipefitter. He keeps asking her all sorts of questions. What kinds of things will you work with, Mommy? Where will you work? Will you use a screwdriver? When will you go to work? Will you eat lunch there? To Regina's relief, she finds the following information in her text.

> **Today's pipefitters work with a wide variety of materials, including steel, plastic, glass, ceramic, brass, stainless steel and numerous other alloys. Their work takes them into oil refineries, chemical processing plants, pulp and paper processing plants, food processing plants, nuclear power plants, and virtually anywhere else in industry where materials must be carried by pipeline. They find themselves involved with new construction, repair of existing facilities, and alterations and modernization of existing facilities.**

1. Write the main idea of this passage in your own words. Which sentences led you to this main idea?

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2. Is it stated or unstated?

3. Which of Regina's son's questions are answered in the paragraph? Which are not?

4 Exercise

Marcus really wants his son to be a pipefitter like him. His son wants to work as a millwright. When Marcus finds a passage in his text on the history of craftsmanship, he thinks, "Maybe this will show my son that it's best he do the same work as I do."

> **Apprenticeship as a means of transferring practical knowledge from one generation to another goes far back in human history. Provisions for the teaching of apprentices are found in the Babylonian Code of Hammurabi 4000 years ago. In ancient Rome, the high level of craftsmanship that produced aqueducts, a great public building like the Colosseum, and a large network of roads was the result of craftsmen and artisans whose skills were handed down from father to son.**

1. Write the main idea of this passage in your own words. Which sentences support this main idea?

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2. Is it stated or unstated? How do you know? If stated, copy the topic sentence.

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3. Does Marcus have a valid argument? Why or why not?

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4. What does the paragraph lead you to believe about the workers of ancient Rome?

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5 Exercise

Machie is buying the tools he will need as a pipefitter. He's found several off-brand wrenches that cost about half of what the brand-name ones cost. He's all set to buy. Then he recalls what his text said about so-called bargains.

> **A good rule to remember concerning hand tools is this: don't scrimp on quality. There are very few "bargains" when it comes to hand tools. Cheap tools will fail and require replacement with a frequency that will make you wonder why you didn't spend those few extra dollars to begin with. Good, quality tools, if properly cared for, will last many years.**

1. Write the main idea of this passage in your own words.

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2. Is it stated or unstated? How do you know? If stated, copy the topic sentence.

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6 Exercise

Mandy has heard that there's a rule about using pipe tongs. No one has ever told her exactly what the rule says, however. She discovers the following while reading her text.

> **A special rigging device called a pipe tong may also be used to handle ductile iron pipe. The pipe tong is shaped to fit the curvature of one or more sizes of ductile iron pipe. When tension is put on the tong by the weight of the suspended pipe, the tong grips the pipe. When tension is released, the tong can be removed from the pipe. Some manufacturers make tongs that fit up to three different sizes of pipe. Others make separate tongs for each pipe size. Never use a pipe tong to handle any size pipe it was not designed for.**

1. Write the main idea of this passage in your own words. Which sentences led you to this main idea?

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2. Is it stated or unstated? How do you know? If stated, copy the topic sentence.

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14 15

3. What is the rule about using pipe tongs that Mandy found?

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4. What would most probably happen if this rule were broken?

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7 Exercise

Mildred wonders how concrete pipe is made. She finds the following information interesting.

> **Concrete pipe is made in molds. Machine processes and conventional casting processes are used to manufacture pipe. If the pipe is to be reinforced, a steel cage is placed inside the mold. This cage may be either a single circle or two cocentric circles, depending on the desired strength of the finished pipe.**

1. Write the main idea of this passage in your own words. Which words led you to this main idea?

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2. Is it stated or unstated? How do you know? If stated, copy the topic sentence.

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3. What effect do the circles of steel cage have on the concrete?

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OBJECTIVE

By the end of this lesson, you will be able to recognize sequence and comparison-contrast paragraph and passage structure.

INSTRUCTION

Pipefitters read blueprints. They show how a piping system should be done. These blueprints show the pattern in which to lay out the pipe.

Paragraphs and passages have blueprints, too. This consists of the text structure. The text structure shows how main ideas and details relate to each other. They show the organizational plans. Recognizing these plans helps you find main ideas. It also helps you recall information more easily.

There are several types of text structure patterns. However, your text mainly uses only two. One is sequence. The other is comparison/contrast.

In sequence text structure, major points or steps are listed. You may not be told how many points or steps will be discussed. Instead, words often signal the number and order of points or steps under discussion. Examples of these words include first, second, third, then, next, and finally. Sometimes these words are not actually stated. Instead, the author assumes you will find the order for yourself.

For example, consider the paragraph below.

> Installation of T-bar clamps is quick and simple. The T-bar is placed between the pipe and/or fitting so that it is parallel to the run of pipe. This can be checked by noting the position of the handle in relation to the pipe. The pipe are then brought tight against the shaft above the T-bar. This sets the correct root opening. The clamp is tightened against the pipe by screwing down the torque lever. This butts the shoe against the pipe, tightening and aligning the pipe. Only hand tightening is necessary. After tack welding, the clamps can be removed by loosening the torque lever. When the handle is turned perpendicular to the pipe, the T-bar will slide out of the joint.

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The main idea of this paragraph is that installing T-bar clamps is fast and easy. The first sentence says this. Thus, the paragraph has a stated main idea. All the other sentences explain how to install the T-bar. By taking them in order, you find these steps:

1. Place the T-bar between the pipe and/or fitting so that it is parallel to the run of pipe.
2. Check the position of the handle in relation to the pipe to see if it is parallel.
3. Bring the pipe tight against the shaft above the T-bar to set the correct root opening.
4. Tighten the clamp against the pipe by screwing down the torque lever.
5. After tack welding, remove the clamps by loosening the torque lever.
6. Turn the handle perpendicular to the pipe. The T-bar will slide out of the joint.

Identifying sequence text structure involves several steps. You look first for the overall main idea, procedure, or problem. Then you find the total number of points or steps. Looking for the signal words, if any, also helps. Next, you look for the relationship among the items or the steps. Then you list these items or steps so you can easily follow them.

Comparison/contrast text structure shows relationships between two or more items. Comparisons show how they are alike. Contrasts show how they are different. Signal words sometimes show whether likenesses or differences are being shown. Comparison signal words include similarly, both, as well as, likewise, and in like manner. Contrasts signal words include however, on the other hand, on the contrary, but, instead of, although, yet, nevertheless, and alternative. Often, however, these words are omitted. Then you must determine the structure for yourself. For example, consider the paragraphs below. The first is an example of comparison text structure. The second is an example of contrast text structure.

All cutting tips, however, have several things in common. They are usually constructed of a copper alloy. There are 2 to 8 preheat orifices around a center hole. The fixture of fuel gas and oxygen is burned in these orifices. The cutting jet of oxygen comes through the center hole. The width of both the preheat orifices and the center hole varies with the application for which the tip is designed.

There are usually two gauges on each regulator. The low pressure gauge indicates the delivery pressure to the hose and torch. This pressure can be decreased or increased by turning the pressure-adjusting screw counterclockwise or clockwise. The high pressure gauge indicates the amount of cylinder pressure entering the regulator. This gauge cannot be adjusted and is used to determine how much gas remains in the cylinder.

To use comparison/contrast text structure, you see how the items are related. You determine if they are alike or different. This tells you the main idea of the paragraph. Sometimes signal words are present to help you. Sometimes they are not. Your next step is to put the details of the paragraph in an order you can recall. One way to do this is to create a chart. You do this by completing the following:

1. **Make a vertical list of the items you wish to compare/contrast.**
2. **List horizontally the features you want to know about each item.**
3. **Draw a grid by sketching lines between each element and each factor.**
4. **Locate and record the information which fills each box of the grid.**

For example, consider the chart below. It shows information found in the contrast-structure paragraph on page 11.

Type of Gauge	What it Indicates	How it's Controlled
Low	Delivery pressure of hoses and torch	Turn clockwise or counter-clockwise
High	Amount of cylinder pressure entering regulator	Cannot adjust

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21

1 Exercise

Margaret knows she'll need pliers on the job. Her text says she needs two kinds. Margaret is familiar with slip-joint pliers. But she needs to know more about sidecutters.

> **Slip-joint pliers are the common variety known to almost everyone. The jaws move and are adjustable to two positions. The important points to remember about slip-joint pliers are these: (1) They are not wrenches. Do not turn nuts with them; and (2) Slip-joint pliers with colored plastic handles are not insulated against electric shock.**
>
> **Sidecutters have wider jaws than slip-joint pliers. They also have capability to cut wire. They jaws are not adjustable. They should be oiled periodically to insure free movement.**

1. Write the main idea of this passage in your own words. Which words tell you this?

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2. Is it stated or unstated? How do you know? If stated, copy the topic sentence.

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3. Which too can be used in more ways? Which words tell you this?

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4. Complete the following chart:

Type of Pliers	Description of Jaws	Adjustable or not?	Other Considerations
Slip-joint			
Sidecutters			

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2 Exercise

Pat plans to buy his father-in-law a portable band saw for Christmas. He wonders whether to buy a carbon steel blade or an alloy steel blade. He knows his father-in-law will use the saw for household projects. He hopes his text will help him pick the best blade.

The blades are made of either carbon or alloy steel. Carbon steel blades are relatively inexpensive and are good for general use. Alloy steel blades, on the other hand, are more expensive than carbon steel blades but will last longer and are able to cut harder materials.

1. Write the main idea of this passage in your own words. Which sentences led you to this main idea?

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2. Is it stated or unstated? How do you know? If stated, copy the topic sentence.

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3. What type pattern is this passage? How do you know?

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4. Which blade would probably be Pat's best choice for his father-in-law's saw? Why do you say this?

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25

26

3 Exercise

Bob wants to know how to torque flange bolts. He studies the torquing sequence until he knows it.

> **To properly torque a flange joint, you must use a crossover method of tightening the bolts. Torque the top bolt first, then the bolt directly opposite. Then torque the side bolt and the bolt directly opposite it. This method puts even pressure on the flange and pre- vents warping.**

1. Write the main idea of this paragraph in your own words. Which sentences led you to this main idea?

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2. Is it stated or unstated? How do you know? If stated, copy the topic sentence.

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3. List the steps in torquing. Which signal words helped you find the sequence?

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